

### **Amendments to the Specification:**

*Please amend the paragraph (section) beginning on page 25, at line 9 as shown below:*

The algorithm may be used to predict the thermodynamics of a set of literature measurements for molecular beacons (Bonnet et al., 1999). Molecular beacons are high specificity probes that are efficient for mutation analysis (Giensendorf et al., 1998) and multiplex detection of single nucleotide variations (Marras et al., 1999). The design and efficiency optimization of these beacons is helped by hybridization thermodynamics prediction. Bonnet et al. studied, the hybridization of the molecular beacon 5'CGC, TCC, CAA, AAA, AAA, AAA, CCG AGC G<sup>3</sup>' (SEQ. ID. NO.: 1) to a set of four different targets including a perfect match duplex, and three different duplexes containing one mismatch. Free energy and enthalpy for duplex folding may be calculated using the DNA MFOLD program (<http://mfold2.wustl.edu/~mfold/dna/form1.cgi>). These parameters may then incorporated as secondary structure corrections in Figure 2a.

*Please amend the paragraph (section) beginning on page 26, at line 13 as shown below:*

Example: AAAACCCCTGA+ (SEQ. ID. NO.: 2)  
\*TTTGGGGAC\*+ (SEQ. ID. NO.: 3)

*Please amend the paragraph (section) beginning on page 26, at line 19 as shown below:*

Example: AAAACCCCC+ (SEQ. ID. NO.: 4)  
TTTT/GGGG+ (SEQ. ID. NO.: 5)

*Please amend the paragraph (section) beginning on page 40, at line 8 as shown below:*

For Module 1: Dup

1 (Sequence number)  
agcgca+ (Top strand sequence) (SEQ. ID. NO.: 6)  
tcgcgt+ (Bottom strand sequence) (SEQ. ID. NO.: 7)

*Please amend the paragraph (section) beginning on page 40, at line 12 as shown below:*

For Module 2: NBP

1 (Sequence number)  
agcgca+ (Target sequence) (SEQ. ID. NO.: 6)

*Please amend the paragraph (section) beginning on page 40, at line 15 as shown below:*

For Module 3:

1 (Sequence number)  
cgccctgcggccc+ (Target sequence) (SEQ. ID. NO.: 8)

*Please amend the paragraph (section) beginning on page 40, at line 18 as shown below:*

For Module 5: bpw

1 (Sequence number)  
cgccctgcggccc+ (Target sequence) (SEQ. ID. NO.: 9)

*Please amend the paragraph (section) beginning on page 40, at line 21 as shown below:*

For Module 6: pwc

1 (Sequence number)  
agcgca+ (Target sequence) (SEQ. ID. NO.: 6)

*Please amend the paragraph (section) beginning on page 40, at line 24 as shown below:*

For Module 7: bwc

1 (Sequence number)  
agcgca+ (Target sequence) (SEQ. ID. NO.: 6)

*Please amend the paragraph (section) beginning on page 41, at line 1 as shown below:*

For Module 8: ppw

1 (Sequence number)  
agcgca+ (Primer sequence) (SEQ. ID. NO.: 6)

*Please amend the paragraph (section) beginning on page 42, at line 27 as shown below:*

1 (input for Module 1)  
ttgcctaggggaccaggtccaact+ (SEQ. ID. NO.: 10)  
aacggatcccctggtccaggttga+ (SEQ. ID. NO.: 11)

*Please amend the paragraph (section) beginning on page 42, at line 30 as shown below:*

2 (input for Module 1)

ttgcctaggggaccaggtccaact + (SEQ. ID. NO.: 10)

aacggatcccctgggtccaggttga + (SEQ. ID. NO.: 11)

*Please amend the paragraph (section) beginning on page 43, at line 3 as shown below:*

3 (input for Module 6)

CAGCTTGCATGAAAAGCTTGCGTGT + (SEQ. ID. NO.: 12)

*Please amend the paragraph (section) beginning on page 43, at line 5 as shown below:*

4 (input for Module 1)

AAAAAA + (SEQ. ID. NO.: 13)

TTTTTT + (SEQ. ID. NO.: 14)

*Please amend the paragraph (section) beginning on page 43, at line 8 as shown below:*

5 (input for Module 1)

acgcgc + (SEQ. ID. NO.: 15)

tgcgcg + (SEQ. ID. NO.: 16)

*Please amend the paragraph (section) beginning on page 43, at line 11 as shown below:*

6 (input for Module 1)

gggaaagggg + (SEQ. ID. NO.: 17)

\*cctttccc\* + (SEQ. ID. NO.: 18)

*Please amend the paragraph (section) beginning on page 43, at line 14 as shown below:*

7 (input for Module 1)  
tttaaattt + (SEQ. ID. NO.: 19)  
aaatttaaa + (SEQ. ID. NO.: 20)

*Please amend the paragraph (section) beginning on page 43, at line 19 as shown below:*

8 (input for Module 1)  
cgcgtaggggcc + (SEQ. ID. NO.: 21)  
gcgctctccccgg + (SEQ. ID. NO.: 22)